MICROVISION

SS445 Large Area Display Measurement System

SYSTEM OVERVIEW:

The SS445 is a Display Measurement System designed specifically for large screen displays. This includes projection displays up to theater size, from any of the present projection engine technologies.

The system uses a motorized Pan & Tilt mechanism to move to the desired test location. The system can be configured with a 1.4MP CCD camera and/or a diffraction grating spectrometer.

In operation, the system is positioned in front of the display to be tested. A pattern generator or Microvision's MVRemote is used to automatically display the test patterns or the image can be generated by the customer's system if required.

The SS445 is designed to make measurements of the display from an observer's point of view, thus better representing the display's performance as it is actually seen. Several observer locations can quickly be measured completely defining the display. Testing can be fully automated where the operator enters the desired test locations(X&Y or pixel coordinates) and the system will automatically find and run the selected tests at these locations.

SS445 Shown with CCD Camera and Spectrometer

TESTING CAPABILITIES:

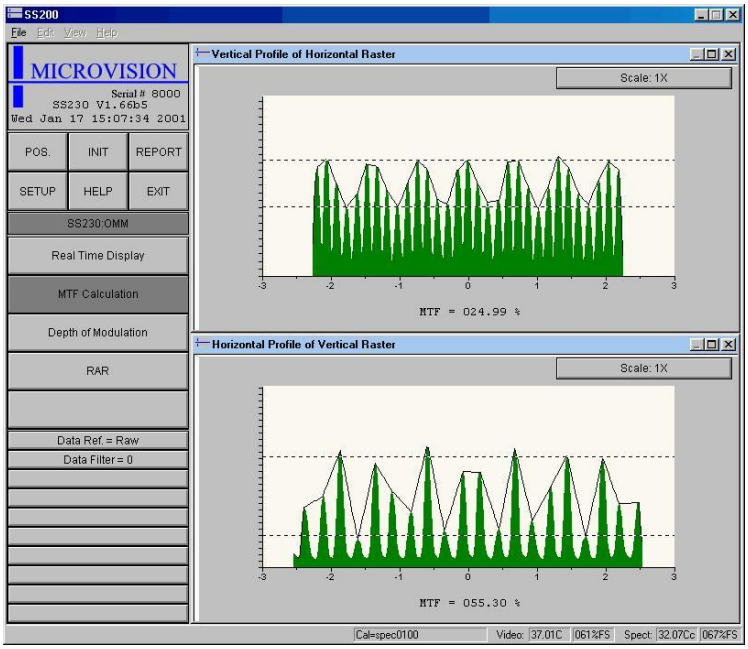
The testing capability of the SS445 includes all of the typical tests for large format displays. The system's capabilities are determined by which sensors are installed (camera and/or Spectrometer). A summary of available tests is listed below:

CCD Camera

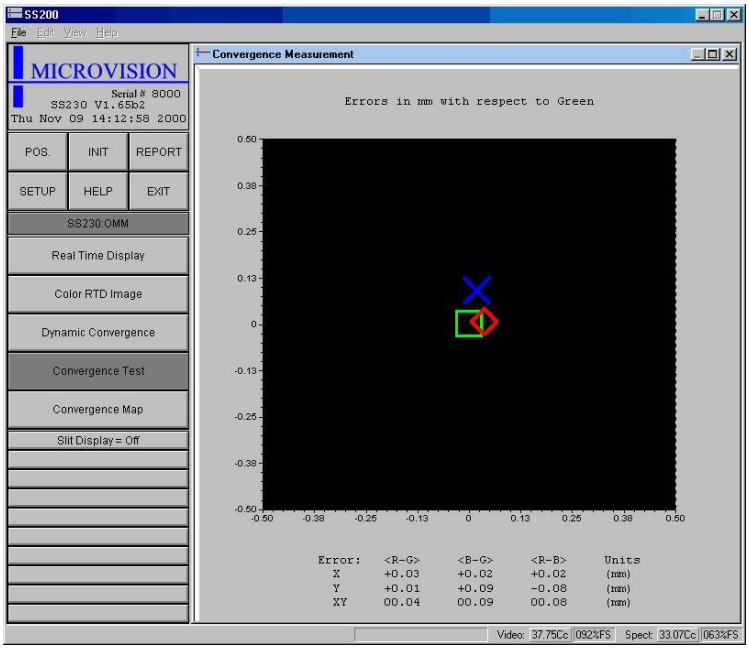
- MTF
- Line Width
- Geometry
- Convergence
- Brightness Uniformity
- Jitter, Swim, Drift
- Gamma/Gray Scale

Spectrometer

- Luminance
- Chromaticity and Color Temperature
- Luminance & Color Uniformity
- Spectral Plots
- Gamma
- Contrast Ratio
- Color Gamut



Modular Transfer Function (MTF)



Convergence Test

SS445 SPECIFICATIONS

Pan&Tilt Assembly

Resolution:	0.0032°
Load Capacity:	9 lbs

CCD Camera

Image Sensor:	1392x1040 pixels
Digital Video:	12-Bit
Element Size:	6.45 µm square pixels
Sync:	Synchronous Capture
Field of View:	20mm @ 1m, adjustable
Working Dist. Range	0.5 to 3.5 meters
Digital Zoom:	Up to 32X
Luminace Accuracy:	+/- 4% @ 2856k
Luminance Range	0.05 to 10^6 cd/m^2 with ND Filters
Measurement Time:	<1 sec for most measurements

Spectrometer

Wavelength Range:	380 to 780nm (1000nm opt)
Luminance Range:	0.01 to 500K cd/m^2
Luminance Accuracy:	+/-3% @ 2856 illuminant A
Lum. Repeatablility	RSD over 30 minutes < 0.5%
	0.01 cd/m^2 sensitivity is specified at 3% RSD
Color Accuracy (x&y)	+/- 0.002 @ 2856K
Color Repeatability	+/- 0.0005 @ 2856K
Integration Time:	16.7 – 5000 msec (sync@60hz)
Termal Regulation:	Computer Controlled
Optics :	12mm Collimated
Acceptance Angle:	1.5°
Optical Resolution:	3.8nmFWHM @ 100µm slit
Calibration:	NIST Traceable
Operating Temperature:	5° to 30°C